E-Books in Malaysian Primary Schools: The Terengganu Chapter

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Abstract—After the Terengganu state government decided to give a boost in teaching and learning through the allocation of free e-books to all Primary five and six students; it was time to examine the presence of e-books in the classrooms. A survey was conducted on 101 students to determine how they felt about using the e-book and their experiences. It was discovered that a majority of these students liked using the e-book. However, although they had little problems using the e-book and the e-book helped to lighten the schoolbags, these new-age textbooks were not fully utilized. It is implied that perhaps the school administrators, teachers and students may not be able to overcome the unfamiliar characteristics of the e-book and its limitations.

Keywords—E-books, students, classroom, limitations

I. INTRODUCTION

THE E-book is a remarkable invention that allows readers the freedom to read almost everything, almost everywhere, at almost any time. The amount of text a person can read on the move all boils down to the bits and bytes the reader and reading device can support. Reading digital books is possible because of the format, content and platform which are currently available. Project Gutenberg championed by Michael Hart started it all in 1971 when he used the computer to store, retrieve, and search for information. Named the e-book or electronic versions of print books; the project has since then created thousands of free texts and copies of books which can be downloaded or accessed online.

The e-book device is considered as a fashionable "must-have" for adults. It has in recent years become more popular and now has attracted younger users, more specifically, students. Little by little, the e-book is being assimilated into teaching and learning. Studies have been conducted on their desirable features, the instructional methods, and technology [1],[2],[3],[4]. Then the interests shifted to its usage, which focused on the user [5],[6],[7],[8],[9],[10]. Studies found that students used e-books as a tool for collecting and conducting research. Reference [11] focused on undergraduates in tertiary institutions. Their interest was to uncover the search behavior and overall usage patterns. However, there is still a need to investigate the usage of e-books among primary school children particularly in Malaysia. This paper investigates the usage of e-books in primary schools in Terengganu, a state located on the east coast of Malaysia after it received 25,000 units of e-books from the state government in 2010.

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More specifically, this study will be the first study to have been conducted to determine if the textbooks were being replaced by the e-books and to examine the current situation in classrooms.

II. BACKGROUND OF STUDY

A. Overview

In a laudable attempt to make education free for all and to eliminate illiteracy, e-books are penetrating developed and developing countries. Portugal, with a Human Development Index (HDI) of 0.809 [12] had initiated the use of e-books amongst students with a partnership with a processing corporation. Half a million units of e-books were distributed. Venezuela with a HDI of 0.735 [12] had distributed a million e-books to their schools. Malaysia with a HDI of 0.796 [12] is the third country to implement e-books into its school system. E-books in the form of laptops were distributed to 25,000 standard five pupils in the state of Terengganu. In 2009, Terengganu became the first state to have provided e-books to its primary school in the whole of South East Asia. *Dewan Bahasa dan Pustaka* or The Institute of Language and Literature, was given the responsibility to develop the digital textbooks for this project. The Terengganu state government was adamant in fulfilling its objective to provide a conducive learning environment and to be technologically updated. The state government believed that it was vital to prepare its students to excel academically and to subsequently face global challenges. These pupils will be taught not only all general year five subjects such as English, Bahasa Malaysia (Comprehension), Bahasa Malaysia (Writing), Mathematics, and Science but also Islamic Religious Knowledge or Islamic Studies. Costing approximately RM15mil, the e-books were distributed to 127 primary schools in Terengganu. The use of e-books in education institutions is relatively new in Malaysia. Several researches have been conducted on the use of e-books among undergraduates in tertiary institutions [11]. Their interest was to uncover the search behaviour and overall usage patterns. Closer to home are those conducted by [13],[15]. They too were interested in the usage and usage patterns of undergraduates. It has been almost two years since the launch of the first phase of the e-books distribution in primary schools in Terengganu. However, there has been a great lacking in research conducted in schools, specifically primary schools.

Since the Terengganu state government has invested substantially to this shift from paper to microchip, it is strongly felt that an investigation should be conducted on the implications of e-books to primary schools, specifically the implications on the education of the primary five students or the 10 year olds.

B. Definition

The e-book content represents the intellectual property component, the format refers to the file or document format

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[14]. Common formats include Microsoft Word doc, txt, HTML or XML. The method of content delivery is described as texts found in the electronic format, Hawkins, Ormes, McKnight and Dearnley, and Vidana, as cited in [15]. The E-book reader is the software which supports the content and the reading device refers to the mobile device such as personal digital assistant or PDA, notebooks and the like. However, Armstrong, Edwards and Lonsdale (2002), as cited in [13] provide a more widely acceptable definition. They claim that the e-book is any electronic text, excluding journal publication, irrespective of its size and composition or digital object which is made available through electronic means or optically, for any mobile or desktop devices which has a screen. Imagine having the access to an average of 3000 books complete with graphics and even audio through a device with a 3 GB memory and weighs about 500 grams!

C. E-book research scenarios in Malaysia

The use of eBooks in educational institutions is relatively new in Malaysia [15],[13]. Reference [16] ascertained the most useful and user-friendly type of e-book reader as perceived by children. The choice was from plus, comic and spiral. Reference [15],[13] were interested in the usage and usage patterns of undergraduates. Reference [17] outlined students' preference on the ideal e-book design.

D. E-Books in Education

There are several studies involving the use of e-Books in the classroom as a medium of teaching [13]. Most of the studies discussed the effectiveness of e-books in enhancing the learning process. As technology is expanding fast, the use of e-Books in classroom has become rampant too especially in the last ten years.

E. Benefits of Using e-Book in the Classroom

Using e-books benefit students physically, academically and psychologically. Other than reducing the weight of their schoolbags which may have adverse effects on their health [18], the e-book can engage students during learning as it has attractive features that encourage their creativity and learning autonomy.

For education administrators or teachers, the e-books ease class management as they allow monitoring of individual students' classroom activities in a simultaneous manner. Therefore, students' development can be closely and conveniently monitored, documented, categorized and accessed [19].

Meanwhile curriculum designers and teachers can improve on teaching methods through the integration of technology in the classroom which could improve their students' learning process.

F. Limitations of using e-Books in the Classroom

Most gadgets have their limitations, so does a typical e-book. Here, [20],[21], [22] described several of their restrictions:
1) Limited storage capacity on the hardware itself.
2) Limited power outlets in a classroom that interrupt the use of e-books in classrooms.

3) Teachers and educators may not be adequately trained to conduct lessons with e-books.
4) Insufficient supply of e-books at schools could not be overcome through sharing as conveniently practiced with textbooks.
5) Some may find e-books do not offer the same pleasure of reading as compared to reading paper books.
6) Some e-book readers discourage text annotation. Students cannot write in texts, underline, circle, or even comment in the margins to help them understand and analyse information.
7) Stringent DRM (Digital Rights Management) often prevents e-books from being shifted from one device to another.

G. Strategies of Using e-Books in Classrooms

From the advantages and limitations of using e-books as textbooks, [23] suggested some guidelines which may provide a rudimentary concept for school administrators or teachers to implement prior migrating from paper books to e-books.
1) Since the migration involves several parties: teachers, school administrators, and technology specialists, there should be a collaborative effort in designing a course syllabus which matches with the functions of the e-book reader.
2) Schools must be equipped with the software and hardware the e-book reader requires.
3) Teachers, as the only mediator between the e-book and students in a classroom, need to be soundly knowledgeable and skilled with this technology
4) The availability of instruction or user manuals for students who are not IT savvy, ESL or English as a second language students, or those with special needs
5) Parents must be familiar with e-book technology to encourage and provide support for the students
6) E-Books need readily available regular maintenance

It is hoped that this study will achieve the following objectives: To determine the reception of electronic books or e-books to the most important stake holder, the primary five and six students and to determine if they are using the e-books instead of paper textbooks. The research questions which would help achieve the research objectives are as follows: 1) How are the e-books being used in the classroom, and 2) what is the reception of the students on the use of e-books?

III. METHODOLOGY

A survey was conducted in the district of Kemaman in Terengganu where there were at least 30 primary schools. The research population included primary five and six students. The research sample was considered convenient and was conducted in five schools. The students from the schools were randomly chosen by their teachers to answer a questionnaire which consisted of 21 questions. The questions addressed usage, emotions, lifespan and assistance towards using E-books in the classroom. A total of 101 forms were distributed and the rate of response was 100%. The questionnaire administered obtained 100% return rate due to the stringent

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organization and management of data collection conducted at the primary schools. Each student was given a questionnaire. They answered the questions after the researcher read each question out loud. Every session in the five schools was conducted in a similar fashion.

IV. RESULTS

Out of 101 participants, 45 were males and 56 were females. The majority were 11 (89.1%) while the rest (10.89%) were 12 years of age.

A. Usage

1) Only 16% used the e-book on a daily basis. The majority (65%) used the e-book sometimes, while 19% rarely.
2) Students agreed up to 6% that the e-book is used daily by their teachers. A majority of teachers (57%) used the E-book sometimes while 35% reported their teachers used the e-book rarely.
3) When asked of their opinion on where the e-books could be used, 80% claimed that it can be used anywhere.
4) More than half the students used the e-book to study at home (55%).
5) About 75% reported that they were able to follow lessons taught in the classroom using the e-book.
6) The same percentage of 43% was received for agreeing and being unsure that the e-book helped them to understand lessons.

B. Reception

1) An encouraging 75% of the students liked using the e-book. Meanwhile 7% did not and 19% were unsure how they felt about using the e-book.
2) When asked if they wanted to use the e-book during school hours, only 41% were keen while 32% were not.
3) This is further reflected in a question which asked of their preference between paper textbooks and e-books. Here, 43% preferred using the e-book and 34% preferred using paper textbooks.
4) A high percentage do not consider the e-book boring (82%)
5) Only 8.9% had problems using the e-book while 66.3% had none. Partly, this was attributed to their IT literacy.
6) Overall 66% of the students agreed that the e-book lightened the weight of their schoolbag.
7) A strong 81% were not bored using the e-book.
8) When asked on their preference between e-books and textbooks, 43% were for the e-book.
9) Between teachers and friends, friends (92%) were asked for help if they did not know how to use the e-book, while 83% asked for their teacher's help.
10) A majority of them have at least one computer at home (62%) and 88% of them were familiar using a desktop computer.

11) The students used the e-book mostly to surf the internet for information (82%), followed by listening to music (52%).

V. DISCUSSION

The penetration of e-books in the classroom is still in its infantile stage. Pupils within the age group of these respondents were born during the information technology surge was already in full swing. It would not have taken them much effort to use the e-book. However, the results obtained could be interpreted otherwise.

Although pupils generally agreed that the e-books can be used anywhere (80%), the e-books were not used as often as expected. Only 65% used it sometimes, in fact, 35% agreed that their teacher used it rarely. Two reasons could have attributed to this result. One is the slow start-up time and two, when the e-book hangs. When these happen, students may find it difficult to follow lessons taught in the classroom. Here, not only would it become the duty of teachers but also the administrative staff to create avenues which would encourage students to use the e-book by overcoming the limitations faced. Considerations such as IT facilities management and teachers equipped with IT know-how should be the backbone of this migration from paper to screen as suggested by [23].

A total of 75% agreed that they were able to follow the lessons taught in the classroom using the e-book however, only 43% agreed that the e-book helped them to understand the lessons taught. This could be indicative that although the e-book may help students to keep track of lessons taught in class, they may not necessarily understand. In this respect, teachers and curriculum designers would need to consolidate materials which would fully utilize the technology available to enhance the teaching and learning experience in the classroom as suggested by [23].

It is interesting to note that although they liked using the e-book (75%) yet only 41% wanted to use the e-book in school. And when asked if they preferred the e-book to paper textbooks, only 43% preferred the e-book. Even though this percentage is higher than those who preferred textbooks (34%), it shows that the students are still in the early stages of getting used to using the e-books for learning. With several limitations of the e-book, such as the inability to write notes, and the restrictive battery life could have made it difficult for some students to adjust. This scenario is similar to the restrictions mentioned by [20],[21],[22].

Through the 66% response from those who agreed that the e-book lightened the weight of their schoolbag, the Terengganu State Government has been successful to a certain extent in their mission to lighten the schoolbags of school children.

VI. RECOMMENDATIONS AND CONCLUSION

From this investigation, it may seem that these schools would need more time to fully explore and take full advantage of using e-books in the classroom. As mentioned earlier, in classroom administration, the e-book eases class management and the monitoring of individual students' activities and

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performance. Students' development can be closely and conveniently monitored, documented, categorized and accessed [19].

It is suggested that a highly qualified IT technician or support staff is required in each school to monitor all e-books and to ensure the e-books function optimally. Similar to our desktop or laptop which requires periodical servicing; these E-books need an in-house technician since the users are new, are children and are in a large number.

This investigation provided the general perceived opinion on the usage of e-book in a primary school. Students will utilize the e-book if their teachers and the school provide the right environment. Further research is suggested to determine differences between usage patterns among groups of schools and on the perception of the teachers on the use of e-books in the classroom.

REFERENCES

[1] Bell, Lori, Virginia McCoy, and Tom Peters. 2002. "E-Books Go to College." Library Journal 127 (8): 44–48.
[2] Dearnley, James, and Cliff McKnight. 2001. "The Revolution Starts Next Week: The Findings of Two Studies Considering Electronic Books." Information Services & Use 21: 65–78.
[3] Simon, Eric J. Electronic Textbooks: A Pilot Study of Students' E-Reading Habits 2001, winter [cited February 20, 2003. Available from http://www.futureprint.kent.edu/articles/simon01.htm.
[4] Wearden, Stan. Electronic Books: A Study of Potential Features and their Perceived Value 1998 [cited February 20, 2003. Available from http://www.futureprint.kent.edu/articles/wearden02.htm..
[5] Anuradha, K. T., and H. S. Usha. 2006. Use of E-Books in an Academic and Research Environment. Electronic Library and Information Systems 40 (1): 48–62.
[6] Bailey, Timothy P. 2006. "Electronic Books Usage at a Master's Level I University: A Longitudinal Study." The Journal of Academic Librarianship 32 (1): 52–59.
[7] Gunter, Barrie. 2005. "Electronic Books: A Survey of Users in the UK." New Information Perspectives 57 (6): 513–22.
[8] Rosenita, Ismail and ZainabA. N. 2005. The Pattern of E-Book Use Amongst Undergraduates in Malaysia: A Case of to Know is to Use. Malaysian Journal of Library & Information Science 10 (2): 1–23.
[9] Littman, Justin, and Lynn SilipigniConnaway. 2004. "Circulation Analysis of Print Books and Ebooks in an Academic Research Library." Library Resources & Technical Services 48 (4): 256–62
[10] Safley, Ellen. 2006. "Demand for E-Books in an Academic Library." Paper read at Twelfth Off-Campus Library Services Conference, at Savannah, Geo.
[11] Hernon, P., R. Hopper, M. R. Leach, L.L. Saunders, & J. Zhang. "E-book use by students: Undergraduates in Economics, Literature and Nursing." The Journal of Academic Librarianship, 33 (2007): 3-13.
[12] United Nations Development Programme (UNDP) - Human development report retrieved from http://hdr.undp.org/en/ on March 6, 2012
[13] Malathi L. and Rohani A. T (2010) Utilization of e-book among university mathematics students. Proceeding in the International Conference on Mathematics Education Research (ICMER).Procedia

[14] Rao, Siringinidi Subba (2003) Electronic books: A review and evaluation. Library Hi Tech, Vol. 21, no. 1:85-93.W. Lucky, "Automatic equalization for digital communication," *Bell Syst. Tech. J.*, vol. 44, no. 4, pp. 547–588, Apr. 1965.
[15] Roesnita Ismail and Zainab A. N. (2007) Factors related to e-books use amongst IT students. Proceeding in the International Conference on Libraries, Information and Society (ICOLIS), Kuala Lumpur, pp 265-275
[16] Mutalib, A.A., Alwi A., and Salam, S.N.S (2206) The acceptance of e-book readers among Malaysian Children in ICOCI2006: International Conference on Computing and Informatics. Retrieved from http://ieeexplore.ieee.org/stamp/stamp.jsp?tp=&arnumber=5276513 on May 2011
[17] Chong PF, Lim YP, Ling SW. On the Design Preferences for Ebooks. IETE Tech Rev [serial online] 2009 [cited 2012 Mar 30];26:213-22. Available from: http://tr.ietejournals.org/text.asp?2009/26/3/213/50706
[18] Anderson, J. April 9, 2007. Heavy schoolbags linked to back problems: Three students lobbying for relief. Ergonomics Today. Retrieved from http://www.ergoweb.com/news/detail.cfm?id=1716. Retrieved on January 2, 2012
[19] David, R. (2011). What are the advantages of E-book readers over print books? Retrieved from http://www.itrainharder.com/what-are-the-disadvantages-of-ebook-over-print-books on January 3, 2012
[20] Donadi, V. and Bloom, D. (2011) Automated conversion to eBook – Problems and limitations. Retrieved from http://www.dclab.com/blog/2011/04/automated-conversion-to-ebook-problems-and-limitations on January 3, 2012.
[21] Rosso, S. (2009) What are ebooks? Advantages and disadvantages of electronic books. Retrieved from http://whenihavetime.com/2009/03/09/what-are-ebooks-advantages-and-disadvantages-of-electronic-books on January 4, 2012
[22] Sasson, R. (n.d.) The benefits and advantages of e-books. Retrieved from http://www.successconsciousness.com/index.htm on November 23, 2011
[23] Abd Mutalib Embong, Azelin Mohamed Noor, Hezlina M Hashim, Razol Mahari Ali and Zullina H Shaari (2012) E-books as textbooks in the classroom. Conference proceedings of the International Conference of Education Research, Cyprus. Procedia-Social and Behavioral Sciences.

Social and Behavioral Sciences 8 pp 580-587. Retrieved from http://www.sciencedirect.com on Jan 22, 2011